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Steam Side Paddle Tug *Eppleton Hall*

Notes on the layout and reconstruction of the above paddle tug currently lying at San Francisco: To be read in conjunction with plans 103-001 and 103-002.

This report has been prepared by Fred M Walker Ltd for Designers & Planners Inc of Arlington VA on request of the United States National Parks Service.

Submitted by

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DRAFT DISCUSSION DOCUMENT ON THE OVERALL ARRANGEMENT OF A RESTORED SHIP
TO BE READ IN CONJUNCTION WITH PLANS 103-001 AND 103-002

Steam Side Paddle Tug *Eppleton Hall*

This is a study of the deck and accommodation areas of the above paddle tug, currently lying at the Historic Maritime Park at San Francisco. It has been prepared with care after consideration of all documents available and after inspection of the ship and of other tugs in the U.K. Recommendations are put forward for acceptable layouts for the ship once reconstructed and refurbished. This study has implications for almost all the tasks required for the restoration of the ship. The notes have been prepared to be read with the preliminary arrangement plans 103-001 and 103-002.

The first stage was to consider the two accommodation spaces under the Upper Deck, that is the Captain's Saloon and Cabin aft and the Crew's Fo'c's'le forward.

The second phase: to consider the deckhouses, engine room weather casings, the configuration of the stores and toilets abaft the paddle boxes and the layout of deck equipment and L.S.A. This phase will include recommendations for the outline of the smokestack and the disposition of rigging.

The final position of the forward towing hook is proving more difficult owing to paucity of information on the tow hook fitting shown on the 1914 plan and later amplified by Mr John Proud to the Museum.

The machinery space does not come within the current arrangements.

The Future of the Ship

The immediate necessity is for the *Eppleton Hall* to be surveyed in detail and for a drydocking to be arranged. The following tasks are not necessarily exhaustive, but will cover the main areas of decision taking:

- (a) The condition of the underwater hull, appendages and hull openings
- (b) A survey of all structural steel including bunkers and changes incorporated in the fabric of the ship over the years
- (c) The preparation of detailed hull and accommodation "as fitted" plans
- (d) A full survey of the steam engine and engine room auxiliaries. This must include a check on alignment and bearings of the main paddle shaft.
- (e) A survey of the existing boiler, flues and uptakes
Investigation into condition of the smokestack
- (f) Survey of paddle wheels, floats and feathering gear
- (g) Survey of all decking, deck furniture and fittings

- (h) Check on masts, rigging and life saving appliances etc etc
- (i) Carry out an inclining experiment when appropriate in reconstruction
- (k) Lift the lines, prepare a body plan and produce hydrostatics

Use of Survey Results

This detailed analysis of the ship will establish the overall seaworthiness of the ship, it will ensure that the owners know the exact changes made to the vessel since her construction on the River Tyne and it will enable decisions to be taken with regard to her future role. It will be also the main tool for costing the restoration.

There are several possibilities for the long term use of the *Eppleton Hall*, but the most likely scenarios are:

1 **Display in the Museum Mode**

This would entail permanent mooring and good facilities for public access to the ship

This situation lends itself to the most sensitive restoration with higher costs in research and presentation, and with care being expended on long term preservation

It is likely that no certification will be required beyond acceptance by the City Fire Prevention Authorities

2 **Restoration to Full Working Condition**

This will require involvement with the Statutory Bodies like the U.S.C.G. and (if underwriters were so minded) with A.B.S.

This will be the most costly path, and one which will limit severely the use of the ship as a visitor experience.

Without doubt the accuracy of the historic authenticity will suffer as the hull must meet with modern safety legislation.

The maximum number of passengers is unlikely to be more than (say) 40, and this will restrict the earning capability of the tug.

3 **Compromise Situation**

Restoration to museum mode, but with full working machinery and equipment. This will allow occasional steaming and the possibility of working as a Museum workboat/yacht.

This costly option will require the virtual replacement or restoration of equipment such as boilers, anchor cables and so on without care for historic detail and then saddling the ship with debts that are effectively irrecoverable.

It is likely that option 1 will be the best in the short term. Should steaming be envisaged then changes to machinery and equipment can be planned later. Experience shows that legislative authorities may be more flexible when applying safety rules to a smart well preserved ship, than when called in to a rusty and run down hull. In the latter case they would tend to operate on "new-building" rules.

Date of Period of Restoration

This should be a clearly defined period, and in the case of the *Eppleton Hall* must be one of two or three clearly defined times.

- 1914 to 1945 Lambton and Hetton Collieries Ltd
During this 31 year period, the ship had few major changes. The smokestack was black with three distinctive red bands
- 1945 to 1964 France Fenwick, Tyne and Wear, Ltd
During this 19 year period the ship served under the management of a well respected tug owning company. They are still in operation as Tyne and Wear Tugs Ltd which is a subsidiary of the Clyde Shipping Company, the oldest steamship company in the world established in Scotland ca 1817
The *Eppleton Hall* arrived in San Francisco in 1970 with the smokestack sporting their blue, white and black colours with the angled anchor.
- 1964 to 1967 The Seaham Dock Company.
During this relatively short period, the tug had the black and red smokestack colours as currently displayed. As a matter of interest, the Side Paddle Tug *Reliant* at the National Maritime Museum, Greenwich has the same rather dull black and red funnel, as she too ended her working days at Seaham on the English North East Coast.

The choice of time would appear to be either the first or the second period. One matter to be recorded is that Tyne and Wear Tugs are aware of the *Eppleton Hall* and that moves are afoot to restore it to her former glory. Their parent company Clyde Shipping (which in turn is part of the massive world wide Swire Organisation based on London and Hong Kong) have a track record of supporting cultural and historical objectives. The Chairman of Clyde Shipping is Dr Len Paterson, an approachable man, and incidentally also a Trustee of the Scottish Maritime Museum at Irvine in Ayrshire.

It is interesting to note that the *Eppleton Hall* has been in San Francisco for a period approaching 25 years. This makes it the second longest period in her life - and undoubtedly the most famous!

Notes regarding the Accommodation Drawings appended

First these have been worked out on a basis of ease of public access. After careful consideration it seems unlikely that the public could enter one cabin (say at the after end) and then walk through entries cut in bulkheads 14 and 47. Therefore it was decided to draw each cabin as it would have been when the ship was new. Minor alterations are recommended with regard to sizes of openings, declivities of stairways etc.

After Deck

The wooden deck seems to extend forward over the bulkhead on frame 14 by about 2". This will require to be checked by opening up once the ship is surveyed. It is suggested however that the existing steel deck at frs 14 - 32 be left (subject to survey). While it is not original in present form, it is compatible with other similar tugs, it will save expense and indeed it is the same as the *Reliant* at Greenwich.

The main towing beam seems correct in all respects and may be original. All deck furniture should be lower than the height of this beam, or capable of being folded down to under that height.

The deck should be completely relaid using teak or pitch pine. However certain substitutes may be acceptable on grounds of cost and availability such as opepe. The deck to be laid on top of the steel beams and secured and caulked in the normal manner. It is unlikely that either tug cabin would have any false deckheading. The present steel beams are mostly replacements of recent years, and a decision will need to be made with regard to their validity (and also the accuracy of their camber) once the full survey takes place.

The after deck of a British tug is kept as clear as possible of obstructions owing to the traditional method of towing and of stowing the towing lines and junks. The drawing shows as few fittings as possible, but these do include the companionway, the central skylight, the water tank and of course the coal range chimney. All of these were on the ship when new.

The companionway is similar to that shown on the original plans. Detailed plans of this - and also of the skylight, can be generated from standard British joinery patterns and using pannelled teak.

The highly decorated small towing beam aft is unlikely to have been with the ship at any early stage and may be redundant in a refit. Also the ship when operating on the Tyne more than likely had a grating fitted over the weather deck just forward of the stern: On this ready use towing ropes would be stowed for quick pick up of emergency jobs. The basket for towing lines is not common on British tugs and again may be discarded in the reconstruction.

After Cabin

The existing set up is not in keeping with the cabin of a working British tug of the early years of this century. Such cabins had a captain's cabin (sometimes also one for the chief engineer) a cooking range, a toilet and fairly plush public accommodation as most tugs acted as tenders to new ships; and the after cabin could be used for transporting important officials from the shipyards to the vessel undergoing trials. This was big business: On the Clyde, a new ship left the river every eighteen hours in the early years of the 20th century! The combined shipbuilding industries on the Rivers Tyne, Wear and Tees were similar.

Small structural changes may be necessary including the fitting of deck beam pillars as found necessary after the refit. It is suggested that the skylight be fitted from frame 6 to 10 and the plans for this be generated from standard British patterns once the final deck camber and dimensions are confirmed.

While it is not shown in the 1914 plan, there is every likelihood that a fold up washing commode was installed in the Captain's private cabin. This would enhance the periodicity of the after cabin, giving it comprehensive outfitting.

The existing cabin sole slopes up aft, and this seems satisfactory. It is proposed that the companionway be altered slightly to allow easier public access and that a clear 3 foot space be allowed at the bottom. To allow for this the captains's cabin is cut back nearly one foot and the pantry area by

nearly 18 inches. If it is decided that these are to be certified crew areas then we must have a rethink, but it is unlikely that they will be more than simulations of early 20 th century crew accommodation.

The ladder as shown on the plan has treads of about 9.5" and risers of about 9.75". With only 8 steps and good handrails this is acceptable for the public.

The panelling on the original ship may have been of almost any good Empire hardwood available to the builders. At this stage it may be better not to decide on the timber as offers of high quality wood may come available. The fixed settees would be given traditional upholstery (probably brown in colour) with the diamond button pattern. Deck covering probably linoleum. There would not have been many fittings beyond oil lamps and a coal scuttle. Some cupboards and lockers would be fitted and these can be specified once the full surveys are complete. The table may prove a serious encumbrance in this small cabin and consideration to be given to either discarding it or having a folding one.

The small coal fired heating/cooking range would have been a standard "off the peg" item and examination of catalogues will identify a likely candidate.

Fore Deck

Just forward of fr 30 the midship steel decks reverts to timber. Subject to a most careful inspection and survey, it is probable that this deck will have to be renewed, as the current deck has many non-historic openings and fittings which have destroyed its integrity. As in the case of the after deck, appropriate timber will have to be selected, laid, payed and caulked in the traditional manner over open deck beams.

The fittings required are shown on the deck plan and will include eight coal loading scuttles (the exact number is being investigated as different plans indicate 6, 8 and 10!) These are directly above the original, and still almost intact coal bunkers. In passing it is worthy of note that the horseshoe shape of the bunkers (in plan view) must have created an enormous amount of work for the firemen in trimming coal to the stokehold.

The vast bulk of the bollards and similar fittings seem acceptable for retention. These will require to be discussed individually at the time of the main hull survey.

Forward Cabin

As far as can be ascertained the forward cabin sole is at the same height as when constructed. It is adequate as such, and under it is the void space frs 47-54 and the chain locker frs 54-58. The existing chain locker pipes do not appear as on the original drawing, but there seems little point in making such a minor change, and they can be adapted as stiffeners for the wooden casing separating the forecastle from the forward store. According to the original plans, there was a samson post in the fore store supporting the forward towing hook platform. As mentioned earlier, this will require considerable research to ensure the correct reconstruction.

The forward store is a simple area, served by one door on casing 54 and internally is sparred and shelved to standard practice.

The fore cabin is a recreation area for the crew with the shell fully lined by (tongued and grooved? - to be checked) battens fitted to grounds. There is little in the way of amenity apart from simple upholstered settees fore and aft, a coal burning stove, lockers and coathooks. It was unusual for the crew on this type of tug to spend more than the odd night aboard. No deck covering normal - bare timber.

Light and air is supplied through a deck skylight and also by a cowl headed ventilator which can be rotated as required. Access is by a companionway entrance - again of standard commercial design and of teak construction. The position would be enhanced by being moved forward one frame space to 52-54. It is suggested that the companionway be of slightly increased size and the stairway down to the cabin be of reduced declivity to assist in public circulation.

Paddle Boxes

The general design has remained (almost) unchanged and they can be renewed as needed with few alterations. The toilet (port) and the store (starboard) are in modified areas. It is suggested that they be re-examined in the main survey and any minor modifications be authorised then.

In the event of the ship being made ready for sea, it is unlikely that the two toilets (one on the prt paddle sponson and the other in the aft cabin) would meet statutory requirements. Further a holding tank would be necessary.

Engine Room Casing and Funnel

This may be the most difficult matter to address: The addition aft to the Engine Room "fiddley" is a most useful asset to the ship and must be considered from the historic point of view during the detailed survey.

The original funnel or smokestack was an elegant structure. It will be relatively easy and inexpensive to reproduce and therefore is dependant on the decision regarding the "date" of restoration.

Mast & Rigging

It is proposed that a timber mast be fitted of the same length as the original and at the same rake of 7.5 degrees.

The rigging is not complex, and can be organised to approximate the original condition of the ship. The rigging for the voyage to California must be discarded, as it does not comply with towing conditions. The forestay must be abaft the forward towing hook.

Navigating Bridge and Wheelhouse

The overall layout of the bridge needs little change. At the time of the detailed survey, it is to be hoped that structural changes required will allow the bridge dimensions to be brought back to the original size. The changes incorporated over the years have been small and changes for their own sake will have to be justified on the grounds of cost and of historic accuracy.

The wheelhouse seems a necessary protection in view of the weather of San Francisco. It is proposed (subject to the decision on the date of restoration) that the configuration of 1914 be adhered to - that is an enclosed space with an aft facing steering wheel. Security alone seems to point one in this direction.

The bridge wings need little change from the historic point of view, and their rebuilding will depend largely on the structural report of the condition of the paddle boxes.

In the conclusions, the proposal is put forward for the bridge wings to be considered as a point of embarkation for visitors, especially those coming from other ships moored parallel and in the same range of tidal movement. Note: The use of paddle boxes for gangways and brows is a well established practice in the United Kingdom.

Lifeboats and L.S.A.

This matter is complex and can be decided only after the survey and all other matters have been decided. It also is affected by the decision on the future use of the ship.

Additional Recommendations

Once the accommodation has been restored, it is essential to fit fire and smoke detection equipment. This can be done with minimum loss of integrity and appearance: Such units can be wired to a monitor concealed in the machinery space.

It is suggested that a warm air blower unit be fitted to keep the two cabins ventilated and free of condensation etc.

If the ship is to be in working mode, then special attention will have to be paid to the toilets and to the fitting of a sanitary holding tank.

The use of the Bridge Deck for receiving gangways and brows to be considered. By mooring the *Epplenton Hall* a short distance off another of the ships - like the *Eureka*, then the tug can be seen by the public, access is by gangway that does not change declivity with the tide and can therefore be designed as a safe permanency.

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